

CLAIMS

- A
1. A telephone apparatus, comprising:
 - a body part,
 - a sleeve-like grip part mounted to the body part for longitudinal slidable movement between a retracted position and an extended position,
 - mechanically coupled to the body part and the grip part, a movement-effecting mechanism for effecting the longitudinal slidable movement,
 - a locking mechanism for detachably locking the body part and the grip part into the retracted position and
 - a user-actuatable releasing actuator for releasing the locking mechanism;
 wherein the releasing actuator is located within the grip part.
 2. A telephone apparatus according to claim 1, wherein the grip part comprises a first side surface and a second surface for holding the telephone apparatus by one hand so that one side surface rests against the thumb and palm and the tips of the other fingers rest on the other side surface, and the releasing actuator is located on one of said side surfaces.
 3. A telephone apparatus according to claim 2, comprising two releasing actuators located on opposite side surfaces.
 4. A telephone apparatus according to claim 3, wherein said two releasing actuators are synchronized so that actuating either one of them alone suffices to release the locking mechanism.
 5. A telephone apparatus according to claim 3, wherein said two releasing actuators are unsynchronized so that only actuating both of them simultaneously suffices to release the locking mechanism.
 6. A telephone apparatus according to claim 1, comprising flexible conductor means having a first point, a second point and between said first point and said second point an elongated portion, wherein said first point is attached to the grip part, said second point is attached to the body part and said elongated portion is free of attachments to the body part or the grip part.

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7. A telephone apparatus according to claim 6, wherein said flexible conductor means is a flat cable.

8. A telephone apparatus according to claim 6, wherein said flexible conductor means is a flexible printed circuit board.

5 9. A telephone apparatus according to claim 8, wherein the grip part comprises a connector for providing an electrical interface to the telephone apparatus, wherein said connector is electrically connected to said flexible printed circuit board.

10 10. A telephone apparatus according to claim 9, wherein said flexible printed circuit board has the shape of a P where the lower end of the loop in the P is not connected to the vertical shaft of the P, so that

- said connector is connected to the lower end of the loop in the P,

- the loop in the P is attached to a flat surface at the inside of the grip part,

- said first point is at the upper end of the vertical shaft of the P,

- said second point is at the lower end of the vertical shaft of the P and

15 - the vertical shaft of the P is bent essentially 180 degrees around a fictitious axis which is perpendicular to the vertical shaft of the P to define a rounded section between said first point and said second point.

20 11. A telephone apparatus according to claim 9, wherein the grip part comprises a microphone that is electrically connected to said flexible printed circuit board through a connecting arrangement in said connector.

12. A telephone apparatus according to claim 8, wherein the grip part comprises a microphone that is electrically connected directly to said flexible printed circuit board.

25 13. A telephone apparatus according to claim 1, wherein the movement-effecting mechanism comprises a torsion spring having a helically wound cylindrical portion, a first torsion arm and a second torsion arm, of which said first torsion arm is mechanically coupled to the body part, said second torsion arm is mechanically coupled to the grip part, and said cylindrical portion, said first torsion arm and said second torsion arm are all located within an essentially closed space defined by the
30 sleeve-like form of the grip part.

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FIG. 10

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14. A telephone apparatus according to claim 1, wherein the movement-effecting mechanism comprises a spiral spring, a first reaction arm and a second reaction arm, of which said first reaction arm is mechanically coupled to the body part, said second reaction arm is mechanically coupled to the grip part, one end of said spiral spring is attached to said first reaction arm, one end of said spiral spring is attached to said second reaction arm, and said spiral spring, said first reaction arm and said second reaction arm are all located within an essentially closed space defined by the sleeve-like form of the grip part.
15. A telephone apparatus according to claim 1, comprising a damper arrangement for smoothing the longitudinal slidable movement.
16. A telephone apparatus according to claim 15, wherein said damper arrangement comprises:
- a cogged rack extending in the direction of the longitudinal slidable movement,
 - an axle,
 - a gear wheel mounted non-rotatably on said axle and engaged with said rack for longitudinal rolling movement in the extending direction of said rack,
 - a damper housing arranged to define a closed damper chamber,
 - viscous damper fluid within said damper chamber and
 - a damper rotor mounted non-rotatably on said axle and enclosed into said damper chamber;
- of which said rack and said damper housing are located within different ones of the body part and the grip part.
17. A telephone apparatus according to claim 16, comprising a support arrangement so that:
- said support arrangement is mechanically fixedly coupled to said damper housing,
 - said support arrangement is movably coupled to said rack for longitudinal slidable movement of said rack in relation to said support arrangement and
 - said support arrangement comprises a vertically limiting part for preventing the vertical movement of said rack in relation to said support arrangement.

18. A telephone apparatus according to claim 17, wherein said support arrangement additionally comprises a transversally limiting part for preventing the transversal movement of said rack in relation to said support arrangement.

19. A telephone apparatus according to claim 1, wherein the movement-effecting mechanism comprises:

- a cogged rack extending in the direction of the longitudinal slidable movement,
- an axle,
- a gear wheel mounted non-rotatably on said axle and engaged with said rack for longitudinal rolling movement in the extending direction of said rack, and
- a clockwork spring located coaxially with said axle and having a first end and a second end, of which said first end is attached to said axle and said second end is attached to a part in relation to which said axle is rotatable;

of which said rack and said axle are located within different ones of the body part and the grip part.

20. A telephone apparatus according to claim 18, comprising a damper arrangement for smoothing the longitudinal slidable movement, and comprising within said damper arrangement:

- a damper housing arranged to define a closed damper chamber and
- viscous damper fluid within said damper chamber;

so that said axle protrudes into said damper chamber.

21. A telephone apparatus according to claim 19, comprising a damper rotor mounted non-rotatably on said axle and enclosed into said damper chamber.

22. A telephone apparatus according to claim 21, wherein said clockwork spring is located in said damper chamber together with said damper rotor, and said second end of said clockwork spring is attached to said damper housing.

23. A telephone apparatus according to claim 21, wherein said damper housing additionally defines a spring chamber so that said clockwork spring is located in said spring chamber and said second end of said clockwork spring is attached to said damper housing.

24. A telephone apparatus according to claim 21, comprising a spring housing which is different than said damper housing, wherein:

- said spring housing is mechanically fixedly coupled to said damper housing,
- said spring housing defines a spring chamber,
- 5 - said clockwork spring is located in said spring chamber and
- said second end of said clockwork spring is attached to said spring housing.

25. A telephone apparatus according to claim 19, wherein the movement-effecting mechanism comprises:

- 10 - a first cogged rack extending in the direction of the longitudinal slidable movement,
- a first axle,
- a first gear wheel mounted non-rotatably on said first axle and engaged with said first rack for longitudinal rolling movement in the extending direction of said first rack,
- 15 - a first clockwork spring located coaxially with said first axle and having a first end and a second end, of which said first end is attached to said first axle and said second end is attached to a part in relation to which said first axle is rotatable,
- a second cogged rack extending in the direction of the longitudinal slidable movement,
- 20 - a second axle,
- a second gear wheel mounted non-rotatably on said second axle and engaged with said second rack for longitudinal rolling movement in the extending direction of said second rack and
- a second clockwork spring located coaxially with said second axle and having a
- 25 first end and a second end, of which said first end is attached to said second axle and said second end is attached to a part in relation to which said second axle is rotatable;

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FIG. 10

of which said first rack and said first axle are located within different ones of the body part and the grip part, and said second rack and said second axle are located within different ones of the body part and the grip part.

26. A telephone apparatus according to claim 1, wherein the movement-effecting mechanism comprises an electric motor.

27. A telephone apparatus according to claim 1, wherein the movement-effecting mechanism comprises a pair of oppositely oriented magnets located within different ones of the body part and the grip part.

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TECHNICAL SECTION